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Application No.: 10/688,761

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Docket No.: IIW-034

AMENDMENTS TO THE CLAIMS

1. (Currently Amended) An exhaust gas processing device for a fuel cell, in which hydrogen gas intermittently purged from the fuel cell is mixed with cathode exhaust gas from the fuel cell and diluted prior to being discharged to an atmosphere, the exhaust gas processing device comprising:

a reservoir in which purged hydrogen gas from the fuel cell is retained and mixed with the cathode exhaust gas from the fuel cell; and

an agitating gas introduction inlet provided at an upper part of the reservoir; wherein the purged hydrogen gas is mixed with and diluted by agitating gas introduced from the agitating gas introduction inlet; and,

an exhaust gas pipe adapted to carry the cathode exhaust gas discharged from the fuel cell, wherein said exhaust gas pipe extends through a lower part of the reservoir and includes at least one hole positioned within the reservoir;

wherein a pressure of the cathode exhaust gas flowing through the exhaust gas pipe is lower at the reservoir than a pressure in the reservoir.

2. (Previously Presented) An exhaust gas processing device for a fuel cell according to claim 1, wherein the agitating gas comprises cathode gas to be supplied to the fuel cell.

3. (Previously Presented) An exhaust gas processing device for a fuel cell according to claim 1, wherein the agitating gas comprises cathode gas supplied from a branch pipe that is branched off from a cathode gas pipe for supplying cathode gas to the fuel cell.

4. (Canceled)

5. (Canceled)

6. (Currently Amended) An exhaust gas processing device for a fuel cell according to claim 1, wherein the exhaust gas pipe includes a smaller diameter portion disposed within the reservoir.

Application No.: 10/688,761

Docket No.: IIW-034

7. (Previously Presented) An exhaust gas processing device for a fuel cell according to claim 1, wherein the agitating gas comprises at least in part cathode exhaust gas to be discharged from the fuel cell.

8. (Previously Presented) An exhaust gas processing device for a fuel cell, in which hydrogen gas purged from the fuel cell is mixed with cathode exhaust gas from the fuel cell and diluted prior to being discharged to an atmosphere, the exhaust gas processing device comprising:
a reservoir in which purged hydrogen gas from the fuel cell is retained and mixed with cathode exhaust gas from the fuel cell; and

an agitating gas introduction inlet provided at an upper part of the reservoir;
wherein the purged hydrogen gas is mixed with and diluted by agitating gas introduced from the agitating gas introduction inlet,
wherein the agitating gas comprises at least in part cathode exhaust gas to be discharged from the fuel cell, and

wherein the agitating gas comprises cathode exhaust gas supplied from an agitating gas pipe that is branched off from an exhaust gas pipe adapted to carry cathode exhaust gas discharged from the fuel cell.

9. (Original) An exhaust gas processing device for a fuel cell according to claim 8, further comprising an adjustment valve provided in the agitating gas pipe and for adjusting an amount of agitating gas, a hydrogen concentration detector for detecting a hydrogen concentration of emission gas discharged to the atmosphere, and a controller for controlling the adjustment valve based on a detection signal from the hydrogen concentration detector.

10. (Previously Presented) An exhaust gas processing device for a fuel cell according to claim 9, wherein the controller controls a flow rate adjusting mechanism to increase an amount of cathode exhaust gas when the amount of agitating gas introduced to the reservoir is not greater than a lower limit value and the hydrogen concentration is higher than a predetermined value.

11. (Original) An exhaust gas processing device for a fuel cell according to claim 8, wherein the exhaust gas pipe extends under the reservoir, and wherein a communication hole provided in a

Application No.: 10/688,761

Docket No.: IIW-034

bottom portion of the reservoir is in communication with a suction hole provided in the exhaust gas pipe.

12. (Previously Presented) An exhaust gas processing device for a fuel cell according to claim 9, wherein the adjustment valve comprises one of a linear valve and a duty valve.

13. (Previously Presented) An exhaust gas processing device for a fuel cell according to claim 10, wherein the flow rate adjusting mechanism comprises one of a compressor which can feed air in accordance with rotational speed and a flow regulating valve which can adjust a flow rate.

14. (Original) An exhaust gas processing device for a fuel cell according to claim 8, further comprising an adjustment valve provided in the agitating gas pipe and for adjusting an amount of agitating gas, and wherein introduction of agitating gas is controlled in response to purging from the fuel cell.

15. (Original) An exhaust gas processing device for a fuel cell according to claim 14, further comprising a recirculation pipe extending from an outlet to an inlet of the fuel cell and recirculating unreacted hydrogen, a purge pipe connected to the recirculation pipe and discharging impurities or water within the recirculation pipe, and a purge valve provided in the purge pipe, wherein the purge valve is open and closed based on a signal from the controller.

16. (Original) An exhaust gas processing device for a fuel cell according to claim 15, wherein the controller opens the purge valve at a time when generated voltage lowers or at every predetermined interval.

17. (Currently Amended) An exhaust gas processing device for a fuel cell, in which hydrogen gas purged from the fuel cell is mixed with cathode exhaust gas from the fuel cell and diluted prior to being discharged to an atmosphere, the exhaust gas processing device comprising:

a reservoir having an inlet through which purged hydrogen gas from the fuel cell is introduced into the reservoir and then mixed with the cathode exhaust gas from the fuel cell; and an agitating gas introduction inlet provided at an upper part of the reservoir;

Application No.: 10/688,761

Docket No.: IIW-034

wherein the cathode exhaust gas to be supplied to the fuel cell is supplied to the agitating gas introduction inlet; and
an exhaust gas pipe adapted to carry the cathode exhaust gas discharged from the fuel cell, wherein said exhaust gas pipe extends through a lower part of the reservoir and includes at least one hole positioned within the reservoir;
wherein a pressure of the cathode exhaust gas flowing through the exhaust gas pipe is lower at the reservoir than a pressure in the reservoir.

18. (Currently Amended) An exhaust gas processing device for a fuel cell comprising:
an exhaust fuel diluter having a reservoir in which hydrogen gas purged from the fuel cell is retained and then mixed with cathode exhaust gas from the fuel cell and diluted prior to being discharged to an atmosphere;
an agitating gas pipe for introducing agitating gas which agitates the hydrogen gas retained in the reservoir;
an adjustment valve for adjusting an amount of agitating gas supplied to the reservoir;
a hydrogen concentration detector for detecting a hydrogen concentration of emission gas discharged to the atmosphere; and
a controller for adjusting the adjustment valve based on a detection signal from the hydrogen concentration detector; and
an exhaust gas pipe adapted to carry the cathode exhaust gas discharged from the fuel cell, wherein said exhaust gas pipe extends through a lower part of the reservoir and includes at least one hole positioned within the reservoir;
wherein a pressure of the cathode exhaust gas flowing through the exhaust gas pipe is lower at the reservoir than a pressure in the reservoir.

19. (Original) An exhaust gas processing device for a fuel cell according to claim 18, wherein the controller controls a flow rate adjusting means to increase an amount of cathode exhaust gas in a case where an amount of agitating gas to be supplied to the exhaust fuel diluter is not greater than a lower limit value and the hydrogen concentration is determined to be higher than a predetermined value.

20. (Currently Amended) An exhaust gas processing device for a fuel cell comprising:

Application No.: 10/688,761

Docket No.: IIW-034

an exhaust fuel diluter having a reservoir in which hydrogen gas purged from the fuel cell is retained and then mixed with cathode exhaust gas from the fuel cell and diluted prior to being discharged to an atmosphere;

an agitating gas pipe for introducing agitating gas which agitates the hydrogen gas retained in the reservoir; and

an adjustment valve for adjusting an amount of agitating gas supplied to the reservoir; wherein an introduction of agitating gas is controlled in response to a hydrogen concentration of the hydrogen gas retained in the reservoir when an execution of purging the hydrogen gas from the fuel cell is not detected; and

an exhaust gas pipe adapted to carry the cathode exhaust gas discharged from the fuel cell, wherein said exhaust gas pipe extends through a lower part of the reservoir and includes at least one hole positioned within the reservoir;

wherein a pressure of the cathode exhaust gas flowing through the exhaust gas pipe is lower at the reservoir than a pressure in the reservoir.